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Farming Opportunities, Career Choices, and Educational Aspirations of Farm Boys in South Dakota

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FARMING OPPORTUNITIES, CAREER CHOICES, AND EDUCATIONAL ASPIRATIONS OF FARM BOYS IN SOUTH DAKOTA

BY

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FARM BOYS IN SOUTH DAKOTA

This thesis is approved as a creditable, independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

Thesis Adviser

Head of the Major Department

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CHAPTER I

INTRODUCTION

A drive through any part of South Dakota will reveal that many farmsteads are vacant. A look through South Dakota's weekly newspapers during the fall and winter months will usually find one or more farm sales being advertised. These sales announce the selling of livestock, equipment, and sometimes the farm land itself. The operator has decided to sell out and quit farming.

Empty farmsteads are evidence that farmers have quit farming. The land is often rented or it is sold to others who desire the addition of more land to their units. The 11.9 per cent increase in the average size of farms in the state between 1954 and 1959 is evidence of this.[1]

The agricultural census shows that the number of South Dakota farms is decreasing and the average size of farms is increasing.

Farmers have found it profitable to increase the size of farm units, and they have been able to operate larger units by substituting capital for labor. They have

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[1] South Dakota Population and Farm Census Facts, Rural Sociology Department, South Dakota State College, Circular 151, January, 1962, p 24.

bought larger equipment which has made operating the larger unit possible without hiring additional labor.

As a result, entry into farming is becoming more difficult. Opportunities are fewer, capital required to enter has increased, and operations have become more specialized. The opportunities to farm do not keep up with the demand by those who want to farm, therefore, some must seek employment elsewhere.

Farm boys in South Dakota should know the facts about the number of farming opportunities that are created in the state each year. They should receive guidance in what is required in physical and managerial resources to successfully compete on a South Dakota commercial farm in the future.

Objectives

This study is designed to assemble facts about opportunities in farming in South Dakota, and facts about the boys who will be looking for these opportunities in the future. These facts should be of interest and value to farm boys and all others who are interested in the education of rural youth.

This study centers its emphasis on the farm boy who will be entering farming as a career. It is designed to bring together a number of facts about opportunities,

educational aspirations, and training available in South Dakota for the boy who plans to farm. This study does not provide research leading to solutions of the problems pointed out by the facts assembled, instead it will provide facts which will help recognize problems that already exist. The specific objectives of the study are:

1. To determine the number of opportunities which will be created in farming during the period 1960 to 1970 in the state of South Dakota if past trends continue.

2. To determine the per cent of South Dakota farm boys who will have an opportunity to enter farming in the state if past trends continue.

3. To determine the career selection and educational aspirations of high school senior farm boys of South Dakota.

4. To determine the occupational training available to farm boys in preparation for a career in farming.

REVIEW OF LITERATURE

No studies were found which provide information about opportunities in farming, career selection, and training available for a career in farming for boys in the State of South Dakota. Literature in the field of farming opportunities generally states that to be an opportunity, the size of the operation should provide a gross annual income of $10,000 or more. Assuming this, Dr. Loyd Glover, Head of the Economics Department at South Dakota State College, stated in an article published in the Brookings Register that an estimated 25 per cent of the farm boys now on the farm will find opportunities in farming or ranching in the State of South Dakota.[1]

Karl Shoemaker in a talk at the 39th Annual Outlook Conference stated that in the United States between 1959 and 1968 there would be opportunities for only 8.4 per cent of the farm boys to become successful farm operators on farms with $10,000 or more income. These are classified as commercial farms, falling in classes I, II, III,[2] by the

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[1]Loyd Glover, "Future Bleak for Many Farm Youth", Brookings Register, Brookings, South Dakota, March 20, 1963.

[2]The Bureau of Census divides commercial farms into six classes based upon value of farm products sold. Class I farms have value of products sold amounting to $40,000 and over, Class II $20,000 to $39,999, and Class III $10,000 to $19,999.

United States census standards.[1] Neither of these reports recognized farms in the classes below III as an opportunity.

Figures released by the Department of Labor predict a decrease of 17 per cent in the demand for farmers and farm workers between 1960 and 1970.[2]

Donald R. Kaldor, etal, at Iowa State University, reported an extensive study about Iowa farm boys' occupational plans. The study included 870 farm boys in their senior year of high school. Of these, 38 per cent were planning to enter college. Boys planning to farm were more certain of their plans and their plans were formulated at an earlier age than the farm boys planning nonfarming occupations.

Of the boys planning to farm, only 15 per cent were expecting to attend college, whereas 43 per cent of the boys planning a nonfarming occupation planned to attend college.

As was reported by their sons, the parents of boys planning to farm had lower education aspirations for their

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[1]Karl Shoemaker, "Impact of Economic Changes on the Farm Community and on Opportunities for Farm Youth", Unpublished Talk at 39th Annual Agricultural Outlook Conference, November, 1961, p 9.

[2]Manpower Challenge of the 1960's, United States Department of Labor, pp 11, 21.

sons than parents of the nonfarming occupation boys. Only 33 per cent of the boys planning to farm indicated that their fathers felt that they should take additional training beyond high school, as compared to 56 per cent of fathers for the nonfarming occupation boys.[1]

Charles B. Nam and James D. Cowhig conducted a study of factors relating to college attendance of high school graduates. Of the high school graduates, 53 per cent planned to attend college the following year, but only 42 per cent were actually enrolled. The college enrollment of rural farm graduates was low, but the proportion of rural farm graduates enrolled in college corresponded very closely with the number who had planned to attend college.[2]

A. O. Haller made a study of Wisconsin farm boys to determine the influence of their plans to enter farming upon plans to attend college. His work concluded that plans to enter farming were a deterrent to plans for

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[1]Donald R. Kaldor, Eber Eldridge, Lee G. Burchinal and I. W. Arthur, Occupational Plans of Iowa Farm Boys, Department of Economics and Sociology, Iowa State University, Ames, Iowa, Research Bulletin 508, September, 1962, pp 623-624, 630-632, 641-643.

[2]Charles B. Nam, James D. Cowhig, "Factors Related to College Attendance of Farm and Nonfarm High School Graduates - 1960", Farm Population, Series Census - ERS (P 27), No. 32, June 15, 1962, p 3.

entering college. This was true for three levels of intelligence.[1] "This conclusion emerges from all studies in which the relationship was tested."[2]

A study of high school seniors in four rural Michigan counties reveals some significant facts about occupation preference and college plans. In these rural counties surveyed, 20 per cent of the farm boys in the survey were seriously considering becoming farm operators. Plans to attend college were indicated by 23 per cent of the farm boys. Most significant is that of the 33 boys who listed farming as their occupational choice, only one planned to go to college.[3]

Literature reviewed for this study is evidence that many states are engaged in research relating to the youth of their states. Some of this research has regional implication, but none of the research provides facts about young

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[1]A. O. Haller, "Influence of Planning to Enter Farming on Plans to Attend College", Rural Sociology, Vol. 22, No. 2, June, 1957, pp 139-140.

[2]Lee G. Burchinal, Career Choices of Rural Youth in a Changing World, Station Bulletin 458, Agricultural Experiment Station, University of Minnesota, November, 1962, p 21.

[3]James Cowhig, Jay Artis, J. Allan Beegle, and Harold Goldsmith, Orientations Toward Occupation and Residence, Special Bulletin 428, Michigan State University, East Lansing, Michigan, 1960, pp 28, 30, 32.

people in South Dakota. This points to a need for more information about South Dakota youth if we are to know the real problems we face in preparing youth for the future. This study is devoted to gathering facts about the farm boys of the state, which is but a small part of the task suggested here.

PROCEDURE

The number of opportunities for entry into farming in South Dakota by farm boys during the 1960's requires the gathering of data upon which this determination can be made. Data needed for this part of the study is: (1) number of farms in the state in 1960,[1] (2) number of farm boys between ages 10 and 19 years old in 1960,[2] (3) number of deaths and retirements among farmers during the decade,[3] (4) number of farmers who quit farming before retirement age during the period of the 1960's,[4] and (5) the decrease in number of farms between 1960 and 1970.[5] A survey was

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[1] United States Census of Agriculture - 1959, South Dakota, Vol. I, Part 19, Table 17, p 30.

[2] United States Census of Population - 1960, South Dakota, PC (1) 43C, Table 71, p 154.

[3] Life Insurance Fact Book, 1962, Mortality Table, Institute of Life Insurance, New York, N. Y., pp 110, 111.

[4] A random sample survey was taken in five South Dakota counties to determine the number of farm sales that had been held during 1962 by farmers under age 65 who quit farming. The survey was conducted in Turner, Marshall, Spink, Meade, and Fall River counties. Surveys in Eastern South Dakota were sent to all banks in the counties. In the West River counties surveys were sent to auctioneers. Replies to the survey were 100 per cent. The sample represents 7.4 per cent of the counties of the state and nine per cent of the farms.

[5] Trend in number of farms by 1970 is based upon the number of farms reported in the census from 1930 to 1960.

conducted in 23 South Dakota high schools to determine the career selections and educational aspirations of all high school senior farm boys.[1, 2] In order to evaluate preparedness for farming gained in high school, each school also submitted a copy of its curriculum.

Evaluation of the high school courses for their value to boys entering farming was accomplished by the preparation of a selected list of courses which were submitted to eight persons for evaluation. These persons were selected because of their knowledge of farm operations and high school courses. Their combined judgment of course value was used as a standard for evaluation.

The evaluation panel members were:

Dr. Burton L. Brage, Director of Resident Instruction, Professor of Agronomy, South Dakota State College.

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[1]See Appendix for survey form used.

[2]The schools used in the survey were selected by random sampling using a table of random numbers. Twenty four schools were used in the survey with replies returned by 23 schools. The survey was sent to the Superintendents of the schools who executed the survey and returned them. The one school not cooperating had 46 high school students. The 23 schools cooperating in the survey represented nine per cent of the schools, nine per cent of the teachers, and eight per cent of the students in the state. Only public schools were used.

Dr. Hilding W. Gadda, Associate Professor of Education, Vocational Agricultural Education, South Dakota State College.

Lloyd R. Wilson, District Extension Supervisor and Extension Training and Studies Leader, South Dakota State College, former Vocational Agriculture teacher.

Alvar Aho, County Extension Agent, Brookings County.

Jerome Kleinsasser, Vocational Agriculture Instructor, Brookings High School.

Arlington D. Eddy, Assistant Director of Resident Instruction, former Director of School of Agriculture, South Dakota State College.

Laurel L. Howe, District Extension Supervisor, South Dakota State College.

Wayne Schulte, Extension Marketing Specialist, South Dakota State College, former Vocational Agriculture and Veterans Agriculture teacher, Guidance Counselor at Yankton High School.

Assumptions

In this study an estimate is made of the number of opportunities for entry into farming that will be available annually during the 1960's. It is assumed that these will be opportunities for entry by farm boys of South Dakota. They must, however, meet the competition from persons re-entering farming as well as the competition from farmers who are entering South Dakota from other states.

This study makes no attempt to set a minimum size of farm or farm income which constitutes an opportunity in farming. It must be recognized that size of farm and farm

income are factors which measure the quality of the opportunity. All farms in the state will, therefore, be considered in arriving at opportunities. This is done primarily because of the necessity in many cases for young farmers to start on relatively small units, often supplementing income by off farm work as he gets started in farming, and also because of the differences in the abilities and aspirations of people. To determine what would be an opportunity for any one individual would be a difficult task.

This study will consider the farm boys who in 1960 were between the ages of 10 and 19 as representing the young men who will be looking for opportunities in farming during the 1960's. By 1970 this group will have reached ages 20 to 29.

Most farmers who quit farming before retirement age generally sell out and dispose of their farm equipment by public auction sale. The number of sales by those under 65 years of age, therefore, will be used as the number of farmers who quit farming before retirement age. Very few private sales are held.

For lack of better information about the future number of farms in South Dakota, the number of farms by 1970 will be estimated. This estimate will be based upon the number of farms during the period 1930 to 1960.

The random sample technique was used as the method for gathering information about occupational plans, educational aspirations, curriculum, farm sales, and farmers entering from out of state, and will be considered reliable information upon which to base this study.

The age of 65 years will be considered the age of retirement for this study. Many farmers will continue to operate beyond 65 but Social Security benefits available to farmers will cause more of them to consider retirement at this age. Those operating beyond 65 will cause a reduction in opportunities.

Chapter II is primarily devoted to finding the number of opportunities which will be created between 1960 and 1970 for entry into farming.

CHAPTER II

OPPORTUNITIES IN FARMING DURING THE 1960'S

Selecting an occupation is a difficult task. The process of selecting an occupation is difficult because young people lack knowledge of the kinds of jobs in which there are opportunities. Many cannot plan occupations because of the uncertainty of financial resources for further training beyond high school. Lack of knowledge about their own ability to qualify for entry into training for specialized jobs causes many to ponder the future.

Boys in South Dakota growing up on the farm live and work in direct contact with the business of farming. As a result of this knowledge and because of their like for farming, many farm reared boys decide to make farming their life work. This no doubt accounts for the fact that a study in Iowa showed that boys planning to farm formulated occupational plans earlier than boys planning nonfarming careers.[1]

This early decision to make farming a career can be made by many boys who know they will receive assistance

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[1]Donald R. Kaldor, Eber Eldridge, Lee G. Burchinal, and I. W. Arthur, Occupational Plans of Iowa Farm Boys, Iowa Agricultural and Home Economics Experiment Station, Research Bulletin 508, September, 1962, p 624.

from their families in becoming established on a farm. Finding a farm still remains the vital problem for a large number of boys who plan a farming career.

Much has been written in recent years about the decreasing number of farming opportunities in the United States. Census data over a period of years shows a declining number of farms in the nation and in South Dakota. These figures do not, however, tell the entire story. These questions arise: How many opportunities to farm will be created in South Dakota during the 1960's? What proportion of the farm boys of the state will have an opportunity to enter farming?

Farming Opportunities in South Dakota for the 1960's

The number of farms in South Dakota has decreased since 1930 with the exception of a period during the mid 1930's. Table 1 shows the decline in number of farms in the state from 83,157 in 1930 to 56,239 by 1960.

Table 1. Number of Farms in South Dakota and Per Cent Increase or Decrease, 1930 to 1960

Year	Number of farms	Per cent increase or decrease
1930	83,157	
1935	83,303	+ 0.17
1940	72,454	-13.0
1945	68,705	- 5.0
1950	66,452	- 3.0
1955*	62,520	- 5.9
1960*	56,239**	-10.0

Source: United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, Table 1, p 3.

*The decennial census is taken in the month of April. Agricultural census taken at five year intervals between decennial census have been taken in January. The periods between each five year agricultural census has, therefore, not been exactly the same. Starting in 1954 the agricultural census was taken in October and November just two to three months before the time previously used and just before the end of the five year period. The 1954 census was taken so close to the end of the year it would represent closely the result had the census been taken in January of 1955. This is also true of the 1959 census date. In this study, the census figures for 1954 and 1959 will be recorded as 1955 and 1960 figures. This adjustment will cause less error than to adjust the census data.

**The number of farms in 1960 was adjusted to compensate for the change in definition of a farm in the 1959 census. This adjustment caused 512 farms to be added to the 1959 census data.

Reduction in number of farms has largely been the result of the application of technology and additional capital to agriculture. This has brought about the changes whereby one man today can farm more land, feed more cattle, or raise more hogs than was possible at any time in the past. If present trends continue, Figure I shows that the number of farms in the state will be further reduced to 47,439 by 1970. This means that the state will lose 8,800 farms during the ten year period 1960 to 1970, for a reduction in the number of farms of 15.6 per cent during that period. For young men who plan to enter farming this represents a reduction of 8,800 in the number of opportunities to farm during the decade.

Before an analysis can be made of the opportunities available to enter farming during the 1960's, consideration must also be given to the number of farmers who are leaving the farm. Those leaving the farm create potential opportunities for entry.

Opportunities for entry into farming are created by (1) death of a farm operator, (2) retirement of a farmer, and (3) farmers who leave farming because of poor health or a better job away from the farm; but opportunities for entry will not equal the number leaving farming during the 1960's if the past trend in farm numbers continues. The trend indicates that during this period the number of

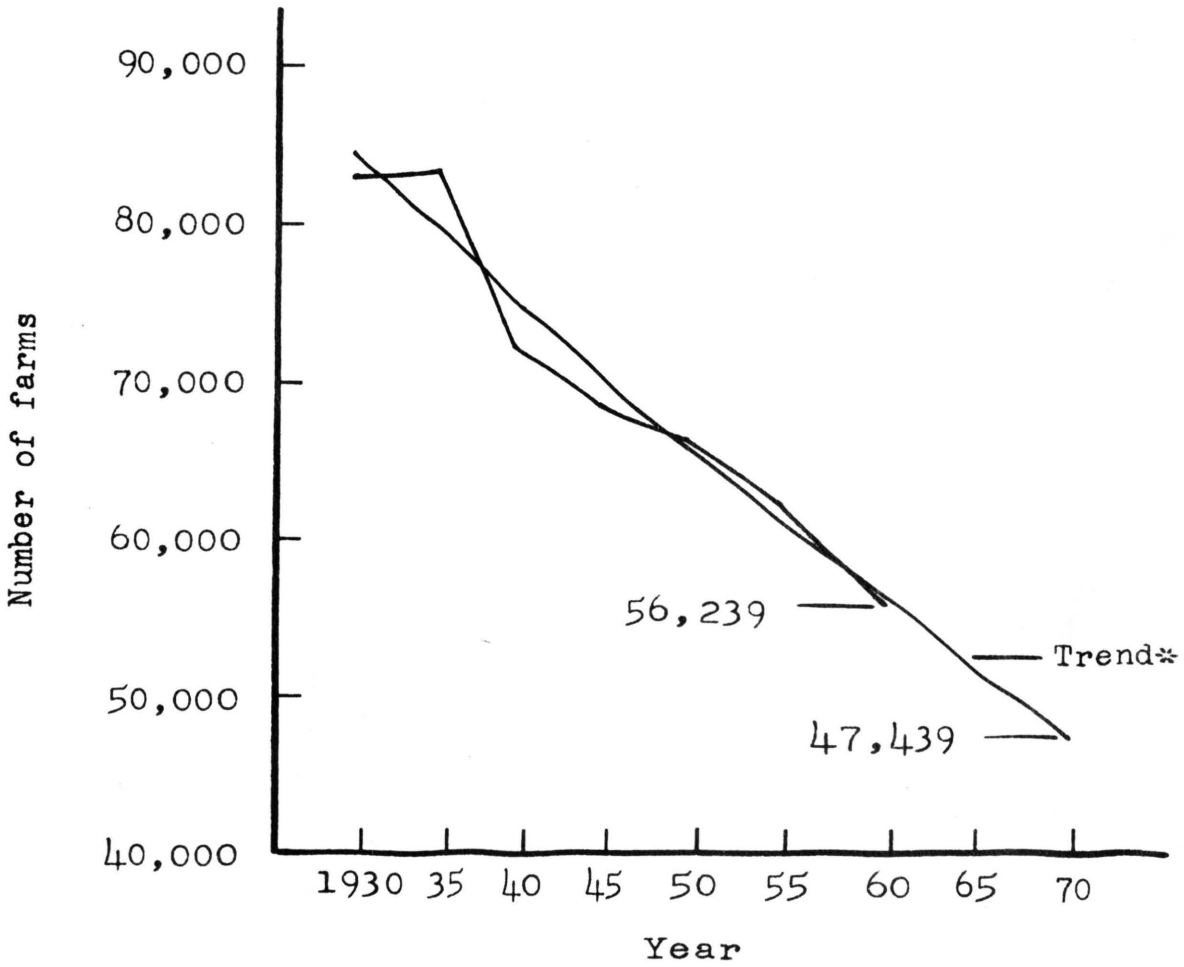

Figure I. Number of farms in South Dakota projected to 1970, based upon the period 1930 to 1960

Source: Table 1, p 16.

*The first degree trend was computed by the sum of the least squares method.

farms in the state will decrease, therefore, the number of opportunities that are created by items 1, 2, and 3 above will be reduced by an amount equal to the decrease in number of farms during the decade.

Table 2 shows the number of deaths and retirements that will likely occur among farmers from 1960 to 1970 by age groups. The table shows that 13,283 deaths and retirements will take place by 1970 among farm operators in South Dakota. These figures are based upon mortality tables by age groups for males of the United States and on the assumption that all farm operators who were age 65 and over in 1960 will no longer be farming by 1970. In the future, advancements in medical technology could reduce deaths, and modern machinery and equipment could make it possible for farmers to continue farming to an older age. This would act to reduce the number of opportunities created for entry into farming. Working to counteract this could be more farmers retiring at age 65 because of Social Security benefits.

Table 2. South Dakota Farm Operator Deaths and Retirements, 1960 to 1970

Age in 1960	Farm operators 1960*	Per cent not surviving 10 years **	Deaths
Under 25	1,103	1.0	11
25 - 34	9,021	2.1	189
35 - 44	13,930	6.4	891
45 - 54	13,816	15.4	2,128
55 - 64	11,200	34.8	3,898
65 and over	5,984	100.0***	5,984
Not reporting age	1,185	15.4****	182
Total	56,239		13,283

*United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, Table 17, p 30.

**Life Insurance Fact Book, 1962, Mortality Table, Institute of Life Insurance, New York, N. Y., pp 110, 111.

***Deaths and retirements assuming that all farmers 65 years old and over would retire at age 65.

****Mortality figures for farm operators age 45 to 54 was used for those not reporting age. This figure was used because the average age of South Dakota farmers falls within this age group.

Census reports provide no data that can be used to estimate the number of farmers who are under age 65 (retirement age) who have left farming during the decade for retirement, health, or better opportunities. These operators leaving farming also represent vacant farms which add to the opportunities for young farmers. Farm sales provide a means of estimating the number of farmers who

leave the farm. To get this information for the state a random sample survey was conducted in five counties among banks and auctioneers who conduct farm sales.

Table 3 shows the results of this survey. Fifty six farm sales were held in the counties sampled during 1962 for operators under age 65 who were quitting farming. This represents 1.1 per cent of the farms in the counties sampled.

Table 3. Auction Sales in Five Counties of the State for Farm Operators Under Age 65 years Who Quit Farming During 1962, and Number of Farms in These Counties

Random Sample of Counties

County	Number of sales*	Number of farms in county**
Fall River	3	399
Marshall	4	877
Meade	7	857
Spink	8	1,325
Turner	34	1,663
Total	56	5,121

*Total of sales clerked by banks and auctioneers in the five selected South Dakota counties. In the counties sampled in Eastern South Dakota, the banks clerk the farm sales. In the West River counties, auctioneers clerk their own sales. This accounts for the two sources used in gathering these facts.

**United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, County Table 1, pp 112, 117.

Projecting these figures to the entire state, an estimated 618 farm operators under age 65 sold out in 1962 and quit farming. Using this figure for the annual farm sales during the 1960's, we can estimate that 6,180 sales will be held during the period 1960 to 1970.[1]

Table 4 shows that 19,463 farmers will drop out of farming between 1960 and 1970 because of death, retirement, health, or for other employment.

Table 4. Number of Farmers in South Dakota Who Will Drop Out of Farming Because of Death, Retirement, and Other Causes During Period 1960 to 1970

Cause	Number of farmers
Death and retirement*	13,283
Health and other **	6,180
Total	19,463

*Table 2

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During the ten year period 1960 to 1970, Table 4 shows that 19,463 South Dakota farmers who were farming in 1960 will not be farming by 1970. This figure does not represent the number of opportunities for entry into

[1]The sale figures for one year cannot be interpreted as the exact sales figure for each of the years in this ten year period. It will, however, be a relatively accurate estimate of sales for the period.

farming because the number of farms in the state will have decreased during this same period. Many of the farms which were vacated became incorporated into existing units by purchase or rental agreement. This figure must, therefore, be reduced by 8,800[1] which leaves 10,663 farms available to those looking for farming opportunities during the decade, for an average of 1,066 opportunities in farming created annually during the period.

This figure represents the number of openings created in the state for entry into farming. It does not identify the quality of the opportunity created. The farm boys of South Dakota will be in competition with each other for these available farms. In addition they must compete with (1) families not now engaged in farming who will enter during the 1960's, (2) farmers who sold out but who returned to farming during the decade, and (3) farmers coming into South Dakota from other states who will buy or rent farms. These people who enter farming will reduce the opportunities for entry by South Dakota boys.

An estimate of the number of out of state farmers who entered farming during the 1960's was made. Table 5

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[1]Figure I shows that the number of farms in South Dakota will be reduced by this amount from 1960 to 1970, if past trends prevail.

shows that in five randomly selected counties, 62 farmers entered from out of state and were still farming there in 1960. This represents two per cent of the farmers in these counties.

Table 5. Number of Farmers From Other States Who Entered Farming in South Dakota During the 1960's in Five Randomly Selected Counties, and Number of Farms in Each County

Counties	Number entering*	Number of Farms**
Bennett	24	331
Clay	13	984
Harding	3	360
McCook	6	1,226
Stanley	16	202
Total	62	3,103

*Information about the number of farmers from other states who entered farming in the five randomly selected counties was secured through the assistance of the county extension agents in these counties.

**Source: United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, County Table 1, pp 114-117.

Two per cent of the farmers of the state in 1960 would equal 1,124, which is an estimate of the number of farmers entering from out of state during the period 1950 to 1960. This means that an average of 112 enter annually and act to reduce the number of opportunities for South Dakota boys by this number. Reducing the 1,066 average

annual opportunities created by 112, which is the average annual number of out of state farmers entering, will leave 954 opportunities annually for entry into farming by South Dakota farm boys.

Farm Boys Entering the Labor Force During the 1960's

Farm boys who were between the ages of 10 and 19 in 1960 will be 20 to 29 years old by 1970. It is this group of South Dakota farm boys who will primarily be competing for the available farms during the 1960's. The number of farm boys in this 10 to 19 year age group in 1960 was 21,330.[1,2] Over the ten year period of this study, an average of 2,133 farm boys each year will be making decisions about their future occupation. There will be room for 954 of them each year in farming. This means that 44.7 per cent of the South Dakota farm boys will find openings for entry into farming during the ten year period

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[1] United States Census of Population - 1960, South Dakota, PC (1) 43C, Table 37, p 123.

[2] The United States Census reports 21,495 boys in this age group. This number has been adjusted to 21,330 because of the number of deaths that will occur among these boys during the 10 year period. The deaths were based on the Mortality Table in the Life Insurance Fact Book, 1962, the same source used in Table 2. The death rate for this age group was .77 per cent or 165 boys.

1960 to 1970. This percentage will be further reduced by competition from farmers who return to farming and by families entering farming for the first time.

There will be an opening in farming for one out of each 2.23 farm boys annually between 1960 and 1970.

CHAPTER III

FACTORS IDENTIFYING NEEDS BY FARMERS OF THE FUTURE FOR SPECIAL TRAINING

Change

Change has taken place in agriculture since the beginning of time, but these changes have come about slowly until the past 50 years. Research in agriculture, which has been carried on by Land Grant Colleges and industry, has accelerated the changes to a point never before reached. Some of the great changes have been in the development of machinery and equipment which makes it possible for one man to farm more land, feed more cattle, raise more hogs, and care for more hens. The farmer of today has found it profitable to substitute capital for labor and to increase the size of his operation.

Paul H. Sheats points out that,

> Knowledge in the physical sciences is doubling every eight or nine years....The earth's population has almost tripled in the last century, but the number of scientists has increased a hundred fold....Ninety per cent of all scientists who have ever lived are alive today.[1]

These facts point clearly toward continuation of present trends in the development of agricultural technology. As a

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[1]Paul H. Sheats, "New Knowledge For What?" Adult Leadership, January, 1963, p 194.

result, the farmer of the future will be called upon to make more decisions about change than have the farmers in the past.

He will face changes in equipment and materials. There will be new crops, new products, and new methods. What, therefore, must be the attitude of these farmers of the future toward change? What can the farm boys, who will be the farmers of the future, do to prepare themselves to accept change? As a group, farmers have vigorously opposed many changes, but as individuals have accepted them. One of these changes is the increased size of the farm operation. What can the farmer of the future do to best prepare himself to take advantage of change? Those who best adjust to change will find greatest success in the future, for in change are created new opportunities.

Trend in Size of Farm and Ranch Operations

Since the discovery of this country, farming has been recognized as an honorable way of making a living. Throughout the growth of the nation abundant land has provided new opportunity to those who wanted to farm, and as a result the opportunity to farm became a tradition. This heritage of ample land to provide a place in farming for all who wanted to farm is an image that is deeply entrenched among rural Americans. The present, with its

limited number of opportunities in farming, is a change that is difficult for rural people to accept.

The number of farms in South Dakota has continued to decrease during the past 30 years.[1] If this trend continues, the number of farms will be reduced 8,800 during the period 1960 to 1970.[2] As the numbers decrease the farm size increases. Based on past trends, the average farm size by 1970 will be 922 acres as shown in Figure II.

The increased size of farms requires that more capital be invested per farm. In addition the value of land has increased. If the price trend continues until 1970, the average capital investment in land and buildings per farm will be $56,274, an increase of $17,268 during the period 1960 to 1970. This trend is shown in Figure III.

Figures which have just been cited indicate a trend toward increased average size of farm and an increasing size of investment for the average South Dakota farm. Not only is this true for the average farm, but it is also true of farms when considered by type of farming area.

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[1]Table 1.

[2]Figure I.

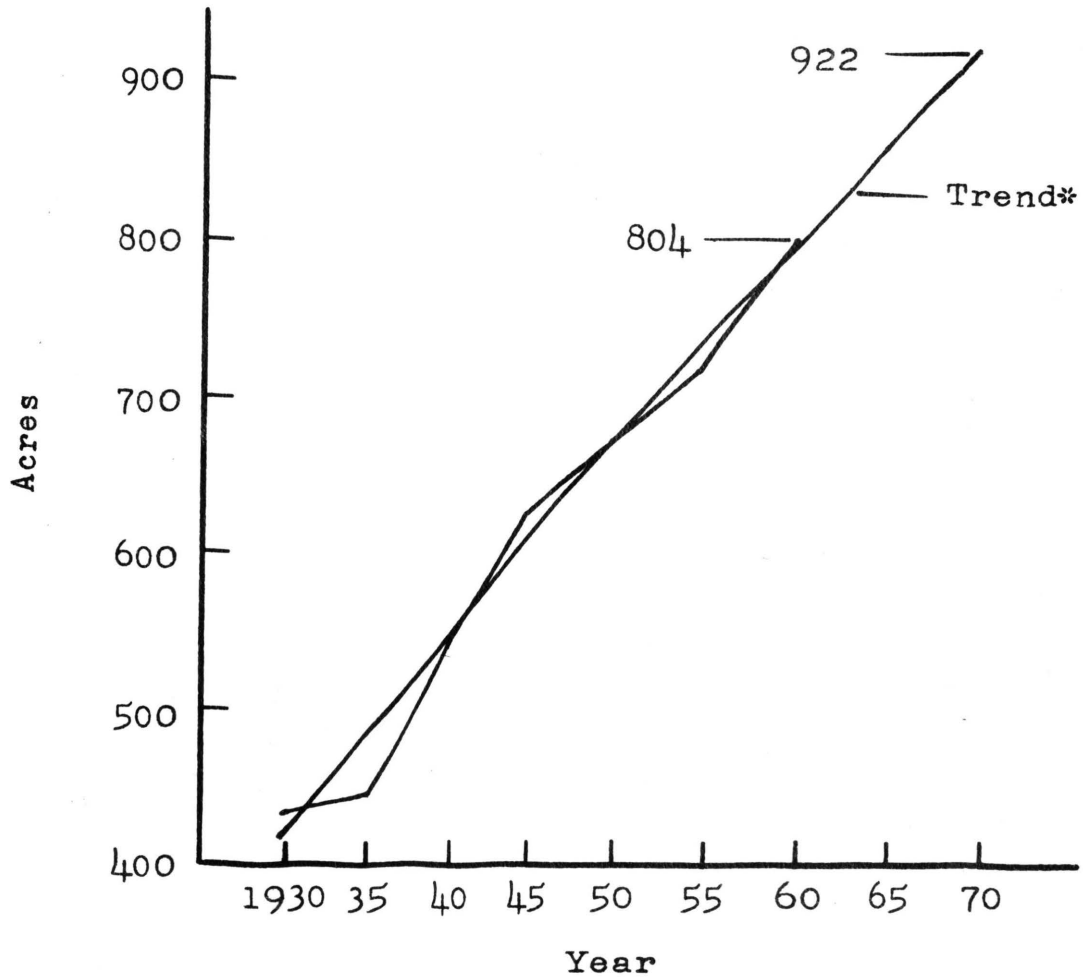

Figure II. Trend in the average size of farms in South Dakota projected to 1970, based upon the period 1930 to 1960

Source: United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, Table 1, p 3.

*The first degree trend was computed by the sum of the least squares method.

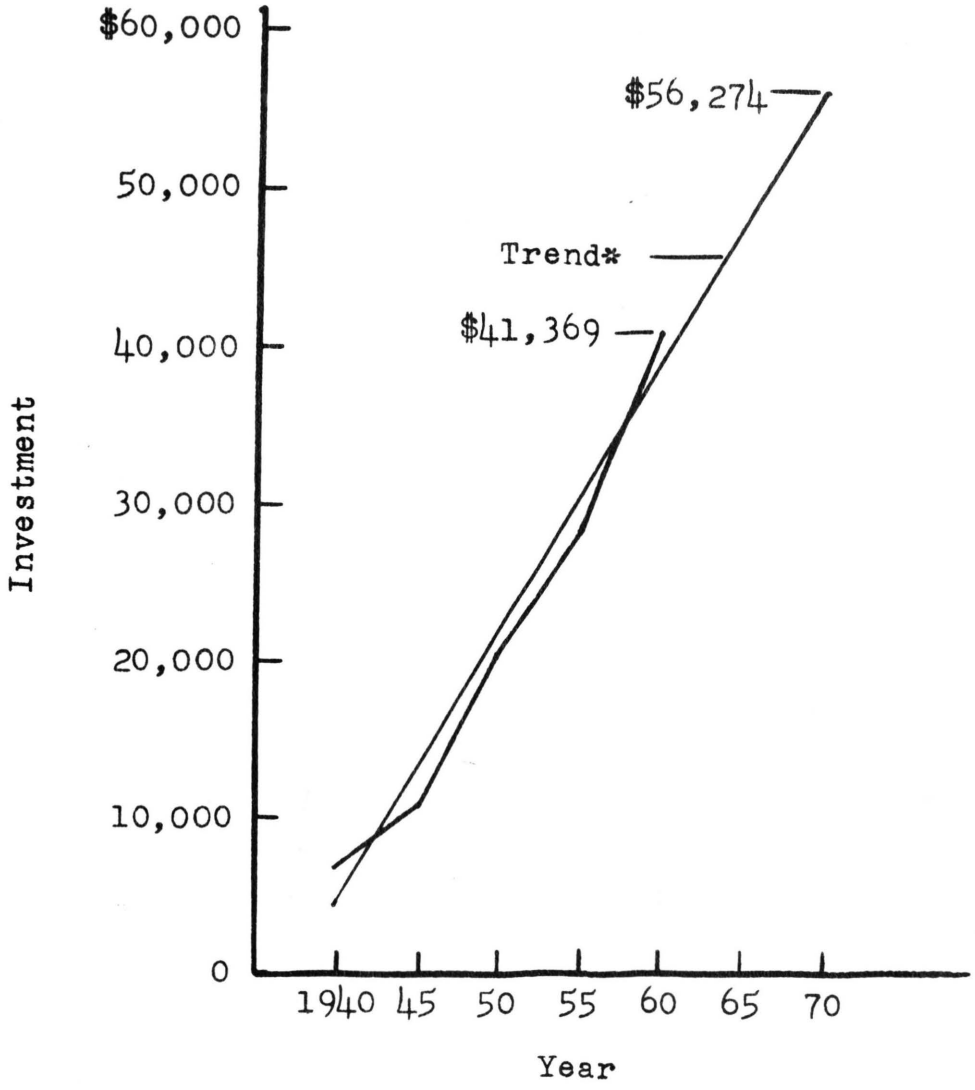

Figure III. Trend in the average investment in land and buildings per farm in South Dakota projected to 1970, based upon the period 1940 to 1960

Source: United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, Table 1, p 3.

*The first degree trend was computed by the sum of the least squares method.

Tables 6, 7, 8, 9, and 10 show selected figures for five major farming areas contained partly or entirely within the State of South Dakota. These tables show that since 1940 land in farms and ranches, operating expenses, total farm or ranch capital, and investment in machinery and equipment have all steadily increased in each of the five major types of farming areas.

Table 6. Wheat, Corn, Livestock Farms, Northern Plains: Size, Investment, and Operating Expense, 1940-1957

	1940	1945	1950	1955	1957
Land in farm (ac)*	432	448	468	480	502
Total farm capital (do)*	11,020	18,860	31,160	39,950	44,160
Machinery and equipment (do)*	1,210	2,460	6,460	8,460	9,110
Operating expense (do)*	1,279	2,393	3,933	4,677	5,072

Source: Costs and Returns on Commercial Farms, United States Department of Agriculture Economic Research Service, Statistical Bulletin 297, December, 1961, Tables 56, 57, pp 174-181.

*Acres (ac), Dollars (do)

Table 7. Wheat, Roughage, Livestock Farms, Northern Plains: Size, Investment, and Operating Expense, 1940-1957

	1940	1945	1950	1955	1957
Land in farm (ac)*	572	648	713	770	790
Total farm capital (do)*	8,170	15,860	28,500	37,020	40,080
Machinery and equipment (do)*	1,080	2,360	5,650	7,800	8,480
Operating expense (do)*	1,200	2,532	3,910	5,103	5,034

Source: Ibid, Tables 58, 59, pp 183-189

*Acres (ac), Dollars (do)

Table 8. Hog-Beef Raising Farms, Corn Belt: Size, Investment, and Operating Expense, 1940-1957

	1940	1945	1950	1955	1957
Land in farm (ac)*	183	198	208	222	234
Total farm capital (do)*	10,960	18,530	28,270	35,680	41,190
Machinery and equipment (do)*	1,080	1,670	3,170	4,710	5,100
Operating expense (do)*	1,040	2,077	2,800	3,866	4,287

Source: Ibid, Tables 14, 15, pp 63-69

*Acres (ac), Dollars (do)

Table 9. Cattle Ranches, Northern Plains: Size, Investment, and Operating Expense, 1940-1957

	1940	1945	1950	1955	1957
Land in ranch (ac)*	3,559	3,667	3,790	4,170	4,225
Total ranch capital (do)*	21,920	37,330	60,290	69,090	69,320
Machinery and equipment (do)*	1,910	2,750	6,080	7,470	7,650
Operating expense (do)*	2,150	2,807	5,378	6,298	6,219

Source: Ibid, Tables 68, 69, pp 222-229

*Acres (ac), Dollars (do)

Table 10. Sheep Ranches, Northern Plains: Size, Investment, and Operating Expense, 1940-1957

	1940	1945	1950	1955	1957
Land in ranch (ac)*	5,015	4,959	5,294	6,240	6,272
Total ranch capital (do)*	25,890	40,580	68,170	81,410	83,750
Machinery and equipment (do)*	1,510	2,560	5,420	6,810	6,810
Operating expense (do)*	3,788	6,010	9,185	12,229	11,254

Source: Ibid, Tables 74, 75, pp 242-249

*Acres (ac), Dollars (do)

The trend toward increased size and greater investment applies to all types of farms in all areas of the state. The capital requirement is another factor which limits entry into farming. For young men planning to enter farming there is need for basic information about financing the farming operation. He should seek training in this area.

Specialization

The young man who enters farming during the 1960's will come face to face with another trend. This is the trend toward more specialization.

Dairying is an example of an enterprise to which specialization has come. Farmers with just a few cows are growing fewer in number.

Table 11 shows that between 1940 and 1959 the number of farmers selling whole milk increased 66 per cent, and the pounds of whole milk sold increased 400 per cent. At the same time, the number of milk cows decreased 47 per cent, and the number who reported sales of milk or cream decreased 51 per cent. Between 1950 and 1959 the number of milking machines increased 97 per cent.

Table 11. Change in Selected Dairy Industry Statistics Between 1940 and 1959

	1940	1959	Per cent Increase or Decrease
Farmers reporting milk cows	60,530	31,332	- 48
Number of milk cows	456,214	242,581	- 47
Sold milk or cream	51,456	25,081	- 51
Value of milk and cream sold	$10,266,000	$28,296,000	+176
Number selling whole milk	3,241	5,383	+ 66
Pounds of whole milk sold	99,000,000	495,000,000	+400
Milking machines	5,734*	11,301	+ 97

Source: United States Census of Agriculture - 1959, South Dakota, Vol. 1, Part 19, State Tables 6-7, pp 9, 10.

*1950 statistics.

Those who remain in dairying are shifting toward the sale of whole milk. Whole milk sold includes Grade A for human consumption and Grade C for manufacturing. The sale of whole milk to meet quality standards has resulted in the use of milking machines, bulk tanks, and can coolers. This additional investment caused some farmers to get out of dairying and forced those who made the investment to increase the size of their herds in order to make efficient use of their equipment.

Specialization is taking place in other enterprises. The trend is especially apparent in the poultry, feed lot, and swine enterprises.

The young man who is preparing for farming in the future will find that specialization has some advantages. One advantage is that it will reduce the number of enterprises in which he must become trained in production and management skills. Growing up on a farm provides good initial training, but in order to meet the competition in the future, a very high level of training will be required.

Farm Management

The business of farming requires more capital investment per employed man than is required in industry. This, therefore, calls for the use of business management principles in farming. In a published article by the Royal Bank of Canada, this statement is made about management:

> Management is a decision-making process. Its special function is to choose between alternative means of moving toward an objective.
>
> None of the changes brought about by technology appears likely to diminish the opportunities open to men who are gifted with skill in making decisions and trained in administration.
>
> Doing business in an economy like ours demands foresight and judgment besides resourcefulness and courage. Only the person who applies all these qualities in making decisions advances his company's business.[1]

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[1] "Decision Making by Management", The Royal Bank of Canada Monthly Letter, Vol. 44, No. 1, January, 1963, p 1.

Howard G. Diesslin made the following statement about the business of farming:

> The commercial farm of today is not merely land, machinery, livestock, and other inventory items, along with enough labor to operate it. The top one third to one half of our commercial farms require high-level management ability to coordinate the resources into a profitable operation.[1]

High-level managerial ability must be developed for farming in the future. The basis for management decisions is knowledge joined with skill in problem solving techniques. The management decisions faced by farmers are endless and they cover an extremely wide range of subject matter fields.

The livestock farmer could well be a veterinarian, an economist, a nutritionist, an engineer, an agronomist, a soils specialist, a mechanic, and an entomologist.

Operating a farm in the future will depend more and more upon the ability of the operator to manage wisely. Competition will continue between farmers and between areas of the country. Specialization will require greater managerial skill in that each enterprise must make money.

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[1]Howard G. Diesslin, "Needed Changes in Lending Policies and Practices in Financing Modern Midwest Agriculture", Financing Modern Midwest Agriculture, North Central Regional Extension Publication, No. 3, Purdue University, 1956, p 4.

Losses cannot be absorbed by other enterprises as the farm enterprises become fewer and larger.

The young man who plans a career in farming must prepare himself for this important management job. Where can he get this training? Do the young men who plan to enter farming in the 1960's recognize this need for training?

The next chapter is devoted to career selection and educational aspirations of farm boys of the state. In that chapter the question about recognition of training needs by young men planning to farm will be answered. Where he can get this kind of training is treated in Chapter V.

CHAPTER IV

CAREER CHOICES AND EDUCATIONAL ASPIRATIONS

It is at the time of graduation from high school that a boy must make one of his first major decisions. He must decide what he will do after graduation. His various choices include: (1) entering the labor market and taking a full time job, (2) continuing his education by enrolling in college, (3) entering into a specific job training program by enrolling in a trade school or an apprenticeship program, (4) helping his parents in their particular type of activity, (5) attempting to start his own business or farm enterprise, or (6) drifting for a time because of indecision, not knowing what his interests are or what might be available.

To those interested in the rural community, what happens to farm boys is an important subject. The farm community cannot supply jobs for all the boys who grow up there. Some of the boys will remain, others will by necessity and choice find employment elsewhere. A Wisconsin study discovered that farm boys showed considerable eagerness to stay in their home community after graduation from

high school.[1]

Little is known about occupational plans and educational aspirations of farm boys in South Dakota. Therefore, this study was designed to secure such information. This is the first step leading to the recognition of problems which need attention. A survey was prepared which was given to high school senior farm boys enrolled in 23 schools in the state.[2]

Place of Residence

The South Dakota economy depends largely upon agriculture. A large part of our population lives on the farm or ranch. Consequently, one would expect a high per cent of the boys graduating from high school to be from rural areas. The figures in Table 12 show that 38 per cent of the senior boys in the schools sampled came from the farm. High school enrollment records for the 1962-1963 school year show that 39 per cent of the senior boys in the state were from farms.[3]

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[1]James Cowhig, Jay Artis, J. Allan Beegle, and Harold Goldsmith, Orientations Toward Occupation and Residence, Michigan State University, East Lansing, Michigan, Special Bulletin 428, 1960, p 22.

[2]See Appendix for survey form used.

[3]Department of Public Instruction, Pierre, S. Dak., 1963.

Table 12. Senior Boys in South Dakota High Schools Sampled, Grouped by Farm and Nonfarm Residence, 1963

	Number in sample	Per cent
Farm boys	147	38
Nonfarm boys	240	62
Total	387	100

Occupational Plans

This study is devoted to the farm boy who plans to remain in farming. For this reason only two career choices were included in the questionnaire. The career choices were: plan a farming career, or plan a nonfarming career. The data in Table 13 indicates that 32 per cent of the high school senior farm boys in the schools sampled are planning to farm and 68 per cent are planning nonfarming careers.

Table 13. Senior Farm Boys in South Dakota High Schools Sampled, Grouped by Occupational Plans, 1963

	Number in sample	Per cent
Plan farming career	47	32
Plan nonfarming career	100	68
Total	147	100

Chapter II shows that there will be openings for entry into farming for 44.7 per cent of the farm boys each year during the 1960's. In this study all farms have been used for the purpose of determining the number of opportunities for entry. Not all of the opportunities for entry can be considered good opportunities for making a living. The good opportunities will be those farms with adequate size to enable the investment of capital and management skill to provide a good living for the farm family. Many of the smaller units will remain opportunities for some people. Small units may be the best alternative for elderly farmers who have no other skills. Small units may be specialized, thereby providing economic opportunity. Small units can provide opportunities for entry to young farmers with limited capital if there is off farm employment available to supplement the family income and provide for capital accumulation. Small farm units provide opportunities for young men to start farming if they are located near family farms. This enables the sons to exchange labor for use of their father's equipment as a means of getting started in farming with limited capital.

Educational Aspirations

South Dakota farm boys who plan to farm rank low in plans to attend college. Only 15 per cent of the boys planning to farm planned to attend college. A large per cent, however, were interested in other kinds of schooling. In the schools surveyed, 45 per cent of the boys planning to farm indicated intention to get some further training beyond high school, while 40 per cent of the boys planning to farm reported that they planned no further training beyond high school. This is shown in Table 14.

Table 14. Future Educational Plans of South Dakota High School Senior Farm Boys in Schools Sampled, Who Plan Farming Careers, 1963

	Number in sample	Per cent
Plan to attend college	7	15
Plan formal training but less than four years college	21	45
Plan no training beyond high school	19	40
Total	47	100

Charles B. Nam and others conducted a study of farm and nonfarm high school graduates. They concluded that the proportion of rural farm graduates enrolled in college

corresponds closely to the proportion for whom definite plans to attend college were reported.[1]

Table 15 shows that in the schools sampled 49 per cent of the high school senior farm boys planning a non-farming career plan to attend college. Thirty nine per cent plan some training less than four years of college, and 12 per cent plan no further training. A comparison of the data in Tables 14 and 15 shows that the farm boys planning nonfarming careers have much higher educational aspirations than do boys planning to farm. The problem emphasized by these tables is that boys planning to farm do not recognize the need for securing further education in preparation for a farming career.

Table 15. Future Educational Plans of South Dakota High School Senior Farm Boys in Schools Sampled, Who Plan Nonfarming Careers, 1963

	Number in sample	Per cent
Plan to attend college	49	49
Plan formal training but less than four years college	39	39
Plan no advanced training	12	12
Total	100	100

[1]Charles B. Nam, James D. Cowhig, "Factors Relating to College Attendance of Farm and Nonfarm High School Graduates, 1960", Farm Population, Series Census - ERS P-27, No. 32, June 15, 1962, p 3.

This chapter provides the facts about career plans and educational aspirations of farm boys in South Dakota, based upon 23 schools sampled. Thirty two per cent of the farm boys surveyed were planning to enter farming. Based upon past trends, there will be openings in farming for 44.7 per cent of the farm boys each year during the 1960's. Some farms will, therefore, be operated by boys who drop out of high school before graduation.

The educational aspirations of high school senior farm boys who planned to farm were much lower than for the farm boys planning a nonfarming career. The greatest difference being in the number planning to attend college and those planning no training beyond high school.

The next chapter provides a look at the occupational training available to these boys planning farming careers.

CHAPTER V

AN ANALYSIS OF EDUCATIONAL OPPORTUNITIES FOR A CAREER IN FARMING

The educational aspirations of the high school senior farm boys from 23 high schools surveyed have been placed into three groups. These are: (1) boys who plan to attend college, (2) boys who plan to take schooling beyond high school but less than four years of college, and (3) boys who plan no schooling after graduation from high school. The education of these farm boys is vitally important for several reasons: (1) Education will largely determine the job opportunities available to them. (2) Education is fundamental to economic growth. It provides the skilled manpower so vital to a growing economy. (3) Education is important for personal and family reasons. It is important in achieving life's goals. It influences family life, social relationships, leisure and health. (4) Education is important in job selection and job selection often determines where a person will live, with whom he will work, and conditions under which he will work. (5) Education is important to the maximum development and utilization of potential talents of people.

This chapter provides an analysis of the education made available by 23 high schools and the colleges of the state for boys who plan a career in farming. The same education is available to all boys but the analysis is directed to the training received which prepares boys for a career in farming.

Three questions will identify the important points to be considered here. They are: (1) Do the high schools of the state provide the needed courses for college entrance? (2) What training is available in high schools of the state for boys who plan to farm and who plan no post high school education? (3) What programs are available in the schools and colleges of South Dakota for boys who want post high school training of less than a college degree in fields which would give them training for farming?

Curriculum of South Dakota High Schools

It is necessary that the high schools of the state provide the courses required for college entrance. College entrance requirements must be met by 15 per cent of the boys who plan to farm and 39 per cent of the farm boys who plan nonfarming careers. It is equally important that the nonfarm high school students be able to meet college requirements.

Standards established for graduation from high school require completion of four units of English, one unit of laboratory science, one unit of mathematics, and two units of social science. The remainder of the subjects can be selected from the school curriculum. A total of 16 units is the minimum requirement for graduation.[1]

In Table 16 South Dakota college entrance requirements are shown. All students who graduate from an accredited high school have the course credits that will qualify them to attend one or more of the colleges in the state. These standards do not meet the entrance requirements for the technical courses at the School of Mines and Technology, and courses in Engineering, Pharmacy, Natural Science, and Science and Applied Arts at South Dakota State College.[2]

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[1] Secondary School Standards, South Dakota Department of Public Instruction, Pierre, S. Dak., Bulletin 21 C, July, 1960, p 28.

[2] See Table 16 for exceptions.

Table 16. South Dakota College Entrance Requirements, 1963

South Dakota Colleges	Units required										
	English	Mathematics	Algebra	Advanced Algebra	Plane Geometry	Solid Geometry	Laboratory Science	Physics and Chemistry	Social Science	American History or Government	Total Credits
Augustana College	4	1					1			1	16
Black Hills Teachers College	3	1					1			1	15
Dakota Wesleyan	In upper half of graduating class										
Huron College	In upper half of graduating class										
Mount Marty College	4		1				1		1½		16
Northern State Teachers College	Graduate of an accredited high school										
School of Mines and Technology	3		1	1	1	1		1			
Sioux Falls College											15
South Dakota State College:											
Engineering	3		1	½	1		1	1			15
SAA*, Pharmacy and Natural Science	3		1		1		1	1			15
All other	3		1				1	1			15
Southern State Teachers College:											
Regular students											15
Special students	Non high school graduate, pass GED test, over 19 years old										
University of South Dakota	4	1					1		1		16
Yankton College	3								1½		15

Source: College catalogue for each school.

*Science and Applied Arts.

Note: All colleges require that entering freshmen be graduates of an accredited high school.

Listed in Table 17 are the subjects offered by the 23 high schools sampled for this study.[1] Comparison can be made between the college requirements in Table 16 and the subjects offered by high schools in Table 17 to determine the schools which do not offer those subjects required for entrance to the School of Mines and Technology and enrollment in Engineering, Pharmacy, Natural Science, and Science and Applied Art at South Dakota State College.

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[1]The 23 high schools sampled submitted a copy of their curriculum for use in this study. The high schools were selected at random using a table of random numbers.

Table 17. High School Curriculum for Twenty Three Schools in South Dakota, 1963

Subjects Offered	Schools Sampled																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
English I	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
English II	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
English III	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
English IV	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vocational English															x								
Drama															x								
Speech				x	x	x				x	x				x					x			x
Creative Writing															X								
Journalism									x		x				x					x		x	
German I					x	x							x		x	x		x				x	x
German II					x	x									x	x		x					x
German III						x																	
Spanish I				x								x			x						x		
Spanish II				x											x						x		
Spanish III															x								
Latin I	x									x	x	x			x						x		
Latin II										x		x			x						x		
Algebra I	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Algebra II	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geometry, Plane	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Geometry, Solid		x			x								x		x				x				x
Trigonometry					x			x			x		x	x	x	x	x		x			x	x
General Arithmetic I		x	x	x									x		x				x	x	x		
General Arithmetic II				x	x														x				
Biology	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Advanced Biology															x								
Chemistry		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x		x	x	x	x	x

Table 17. (continued)

Subjects Offered	Schools Sampled																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
General Science	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Advanced General Science															x								
Geology		x		x																			
Physics	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x		x
Bookkeeping	x		x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Business Law				x							x	x	x	x		x			x				x
Business Arithmetic				x									x			x		x		x			
General Business		x	x		x						x		x	x			x		x				
Office Practice															x				x				x
Shorthand I	x	x	x	x	x		x			x		x	x	x	x	x			x	x	x	x	x
Shorthand II		x			x							x			x	x							
Typing I	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Typing II	x	x	x	x		x	x	x	x		x	x	x			x		x	x	x	x	x	x
Vocational Ag. I		x								x		x						x		x			x
Vocational Ag. II		x								x		x						x		x			x
Vocational Ag. III		x								x		x						x		x			x
Vocational Ag. IV		x								x		x						x		x			x
World History	x	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x
American History	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
American Government	x	x	x	x	x	x		x	x	x		x	x	x		x		x	x	x	x	x	x
Problems of Democracy															x								
International Relations				x													x						
Civics or Citizenship											x				x	x							
Social Studies			x	x											x								
Sociology	x				x	x	x		x		x			x			x	x	x	x			
Psychology	x						x	x	x								x	x	x	x			x
Economics	x				x	x	x		x	x	x	x		x		x	x		x		x		x

Table 17. (continued)

Subjects Offered	Schools Sampled																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
World or Economic Geography		x	x		x	x		x						x			x						
Art																					x		
Home Economics I				x	x	x		x	x	x	x	x	x		x	x		x		x	x	x	x
Home Economics II				x	x	x		x	x	x	x	x	x		x	x		x		x	x	x	x
Home Economics III						x				x		x			x	x		x		x	x	x	x
Home Economics IV												x			x						x		
Shop (Ind. Arts) I	x	x		x	x		x	x	x		x	x	x		x	x	x	x			x	x	x
Shop (Ind. Arts) II								x					x		x	x						x	x
Shop (Ind. Arts) III													x			x							x
Welding															x								
Power Mechanics															x								
Mechanical Drawing											x				x						x		
General Metals															x								
Aeronautics															x								

High School Curriculum for Training in Farming

This study shows that 40 per cent of the boys who plan to farm do not plan any post high school education before entering into farming. The education received in high school would be the only formal training received by this group in preparation for a career in farming. Do these boys planning to farm have an opportunity to take the subjects which would add to their skill and knowledge about the business of farming?

This question will best be answered by the use of a selected list of subjects taken from the curriculum offered by the schools sampled.[1] The curriculum of the schools attended by boys who planned to farm was analyzed to determine which of the 23 selected courses were available to these boys.

This list of 23 subjects was submitted to a committee for evaluation.[2] These descriptions were used in

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[1]These subjects were selected on the basis of their being of value to a boy planning to farm. In the selection, consideration was given to their value in improving skills and knowledge about the business of farming as well as their contribution toward preparation for effective citizenship in the community. The list was reviewed and approved by Dr. Hilding W. Gadda, Associate Professor of Education, Vocational Agricultural Education, South Dakota State College.

[2]Evaluation committee members are listed on pages 10, 11.

making the evaluation for each subject: very valuable, valuable, of some value, of no value. The evaluation for each subject was converted to a numerical score.[1] The committee members' evaluation scores for each subject were added and the total score for each subject was converted to an index value.[2]

The index value for each subject and the per cent of boys planning to farm who had each course offered in his high school are found in Table 18.

Three subjects received an index value of 96. Of these, biology was available to 94 per cent of the boys planning to farm. Economics was available to 66 per cent, and vocational agriculture was available to 38 per cent. An index value of 92 was given to civics and power mechanics. Civics was available to 21 per cent of the boys planning to farm; power mechanics was available to 11 per cent. The table shows that courses which have a high index value to the boys who plan to farm are not always available to them.

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[1]These numerical values were assigned: very valuable, 4; valuable, 3; of some value, 2; of no value, 1.

[2]See Appendix for summary of rating value by panel members.

Table 18. Index Value of Selected Subjects for Boys Planning to Farm and Per Cent of Boys Planning to Farm Who Have an Opportunity to Take the Selected Subjects in High Schools they Attend, Based Upon Sample - 1963

Selected Subjects*	Index value**	Per cent having opportunity to take course***
Biology	96	94
Economics	96	66
Vocational Agriculture	96	38
Civics or Citizenship	92	21
Power Mechanics	92	11
English	88	100
Welding	88	11
General Science	83	100
Bookkeeping	83	81
Business Law	79	40
Chemistry	75	96
Speech	75	53
General Arithmetic I	75	15
Business Arithmetic	75	15
Advanced Biology	71	11
American Government	67	81
Advanced General Science	67	11
Shop I (Industrial Arts)	62	72
Algebra	58	100
General Metals	58	11
General Arithmetic II	54	13
Mechanical Drawing	54	11
Shop II (Industrial Arts)	50	34

*Selected from Table 17.

**Evaluation details, see Appendix.

***Complete list, see Appendix.

In South Dakota where many high schools are small, it is not possible for them to offer all courses which are of greatest value to any one group of students. This is possible only in schools where students can be consolidated in larger numbers so that a larger tax base is available to support more courses. In Table 19 note that 49.3 per cent of the schools in South Dakota have four to seven teachers.

Table 19. High Schools in South Dakota Grouped by Number of Teachers, 1962-1963

High school teachers per school	Number of schools	Per cent of schools
4	46	19.0
5	24	9.9
6	28	11.2
7	22	9.2
8	22	9.2
9	23	9.6
10	10	4.1
11	10	4.1
12	10	4.1
13	5	2.1
14	5	2.1
15	5	2.1
16	3	1.2
17	3	1.2
18	4	1.6
19	2	0.8

Source: M. F. Coddington, Educational Directory of South Dakota Schools 1962-1963, Department of Public Instruction, Pierre, S. Dak., pp 16-25.

Vocational agricultural training is available in high school to 38 per cent of the high school senior boys who plan to farm, based upon the schools sampled. Table 20 shows that 32 per cent of the boys planning to farm have taken four years of vocational agriculture and 44 per cent have had one to four years. The boys who plan to farm are taking advantage of this vocational training where it is available to them.

Table 20. Years of Vocational Agriculture Completed by South Dakota High School Senior Farm Boys in Schools Sampled, 1963

Years vocational agriculture completed	Boys planning farming career		Boys planning nonfarming career	
	Number in sample	Per cent*	Number in sample	Per cent
0	26	56	69	69
1	3	6	10	10
2	0	0	3	3
3	3	6	3	3
4	15	32	15	15
Total	47	100	100	100

*Boys planning to farm who have taken one or more years of vocational agriculture in high school total 44 per cent. This appears inconsistent with the survey statement that only 38 per cent of these boys have opportunity to take vocational agriculture. This difference comes about because families move. Boys enrolled in schools offering vocational agriculture move to schools where the subject is not offered. The opposite could also be true for the entire population where boys move from schools offering vocational agriculture to schools not offering it.

Chapter III suggested a large number of management decisions which the farmer must make. Decisions are made from knowledge gained by education at school and by practical experience. Both are valuable. Technology and the importance of making correct decisions in farming increase the need for training in farm operation and management.

Herschel T. Lester, Jr., in a Missouri study, shown in Table 21, demonstrated differences in average farm income of non high school graduates, high school graduates, and post high school education.

Table 21. Post High School, High School, and Non High School Education in Relation to Farm Income

Education	Average farm income dollars
Post high school	$5,224
High school graduates	3,514
Non high school graduates	2,291

Source: Herschel T. Lester, Jr., How Young Men in Missouri Communities Served by Vocational Agriculture Start and Progress in Farming, University of Missouri, Columbia, Mo., 1961, p 11.

These facts imply superior ability in making management decisions by those boys who have had more education for farming. Of the 100 farmers surveyed, they ranked classes in vocational agriculture, institutional on farm

training, extension service, and college training as factors contributing to a successful farm business.

It is evident that there is a wide variation among the high schools of the state in terms of the training available to best prepare boys for a career in farming.

Post High School Training for Boys Planning to Farm

An important finding from the survey was that 45 per cent of the boys planning to farm indicated that they planned to take some kind of post high school training, but they were not interested in four years of college.[1] Table 22 shows that this group represents 5.4 per cent of all high school senior boys in the schools sampled. Applying this per cent to the senior boys enrolled in high schools of the state in 1963 would equal 228 boys. These are all boys who expressed interest in formal schooling beyond high school, but less than four years of college. Their aspiration is education which would help them make a success of a career in farming.

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[1]Table 14, p 44.

Table 22. Educational Aspirations of High School Senior Farm Boys in Schools Sampled Who Plan a Farming Career, Expressed as a Per Cent of all Senior Boys, 1963

Educational aspirations	Per cent planning farming career	Per cent planning nonfarming career	Total
Plan to attend college	1.8	12.7	14.5
Plan some formal training after high school	5.4	10.1	15.5
Plan no further schooling	4.9	3.1	8.0

The group of boys planning to farm and who are looking for post high school training for a career in farming should be looking to the institutions specializing in agricultural training. No attempt has been made here to identify the wants or needs of this group. Their desires may not be what is most needed. Further exploration into this area is needed.

Two colleges in South Dakota offer programs of the kind that would be of greatest value to these boys planning farming careers. South Dakota State College offers two programs in the Agricultural Operations Curriculum, and Southern State Teachers College, through their vocational education courses, offers training in subjects valuable to boys planning to farm.

South Dakota State College

The two programs offered at South Dakota State College for boys desiring less than four years of college are the "Winter Term Program"[1] and the "Two-Year Certificate Program."[2]

The "Winter Term Program" starts in December of each year and continues for a six week period. Five courses are offered to high school graduates in this program. They are:

Course	Credit
Orientation	0
Crop and Soil Management	1.5
Farm Management and Records	1.5
Farm Mechanics	1.5
Livestock Management	1.5

Credits earned from courses in this curriculum may be applied, on an elective basis and at the discretion of the major department, toward a two year certificate or a Bachelor of Science degree in agriculture. This "Winter Term Program" offers to boys a chance for post high school instruction in the field of agriculture.

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[1] South Dakota State College Annual Catalog, 1963, Brookings, South Dakota, p 6.

[2] Ibid, p 5.

The "Two-Year Certificate Program" offers courses included in the freshman and sophomore years of the degree program. It is especially designed for students who plan to study agriculture for less than four years. Course selection has considerable freedom by allowing 13 semester hours of electives in the freshman year and 11 semester hours of electives in the sophomore year.

A limitation to this program, from the point of view of the post high school boy, is that he must take all freshman and sophomore required courses which include military, orientation, and physical education. Required courses, such as English and inorganic chemistry, are a deterrent to entry in this program. The program offers no variation from the first two years of the four year option.

Enrollment during the 1962-1963 school year at South Dakota State College in the "Two-Year Certificate Program" was 45, and in the "Winter Term Program" for 1962-1963 there were eight enrolled.

Southern State Teachers College

The "Vocational Education Program"[1] at Southern State Teachers College has some merit for boys planning to farm. Courses offered which have value in farming are

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[1] 1962-1963 Annual Bulletin, Southern State Teachers College, Springfield, S. Dak., p 17, 79.

auto mechanics, diesel mechanics, and carpentry. High school graduates as well as non high school graduates age 19 and over can enroll. Courses in vocational training can be set up for one or two years duration.

This program, too, has limitations in that some required courses are not desired by some farm boys. While these required courses are valuable, because they provide a balanced educational program, they act to reduce the number of students who would enroll.

Four questions about these programs should be considered: (1) Is there adequate knowledge of these programs among high school graduates for whom they are designed? (2) Are the courses offered adequate to prepare the farm boys for the complex job of farming in the future? (3) Are the courses offered the kind that boys planning to farm want to take in preparation for a career in farming? (4) Is the emphasis which is being placed upon these programs adequate, considering the large number of boys who indicate an interest in less than a four year college education program?

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study was designed to point out certain facts which are important to those who are interested in the education of farm boys for a career in farming.

The objectives of the study were:

1. To determine the number of opportunities which will be created in farming during the period 1960 to 1970 in the State of South Dakota, if past trends continue.

2. To determine the per cent of South Dakota farm boys who will have an opportunity to enter farming in the state, if past trends continue.

3. To determine the career choices and educational aspirations of high school senior farm boys of South Dakota.

4. To determine the career training available to farm boys in preparation for a career in farming.

In arriving at the number of opportunities created for entry into farming during the 1960's, all of the farms in the state were used in the calculation regardless of size. It was not the purpose to identify the quality of opportunity, although it is recognized that the quality of opportunity depends upon the size and productivity of the

farm unit, capital available, and the managerial ability of the operator. Factors considered in creating opportunities include death, retirement, and leaving farming for other reasons. Factors considered which cause a reduction in the number of opportunities were the decrease in number of farms, competition for farms from out of staters, and competition from people in South Dakota entering or re-entering farming.

The study reveals that there will be 10,663 opportunities to enter farming created during the 1960's for an average of 1,066 created annually. Opportunities available to South Dakota farm boys will be further reduced by farmers entering from out of state, which leaves 954 opportunities for entry by the farm boys of the state.

In 1960 there were 21,330 farm boys 10 to 19 years old. During the ten year period covered by the study, an average of 2,133 will annually be entering the labor market. Based on 954 annual opportunities created in farming, there will be openings created for 44.7 per cent of these farm boys each year, or one opportunity to enter farming for each 2.23 farm boys.

Farm boys surveyed indicated that 32 per cent were planning to farm. Of this group which plans to farm, 15 per cent plan for a college education, 45 per cent planned

some post high school training, but less than four years of college, and 40 per cent planned no further training beyond high school.

The study indicates that boys who plan to farm have low educational aspirations, much lower than the farm boys planning nonfarming careers. Studies of farm boys in other states report that planning to farm has a severely depressing effect on plans to attend college. This depressing effect of plans to farm upon plans to attend college is obviously true in South Dakota as well, and could suggest that parents also have low educational aspirations for sons who plan to stay on the farm.

Some of the boys who plan to farm will not find farms; others, who are successful in entry, will be forced to leave farming. These boys will be poorly trained to compete for jobs and may be forced to accept less desirable jobs because of their lack of education.

The curriculum offered by each of the high schools sampled is adequate to allow high school graduates to enter college in South Dakota. Some schools do not offer the science and mathematics courses which are required for enrollment in the technical courses at South Dakota State College and the School of Mines and Technology.

Educational aspirations of 45 per cent of the boys who plan to farm consists of some training beyond high school but less than four years of college. This group represents 5.4 per cent of high school senior boys in the state.

Post high school educational programs for these boys is very limited in South Dakota. Programs available to them are offered at two colleges in the state. The program at Southern State Teachers College is not designed especially for farming but has application. South Dakota State College offers two programs designed for this group of boys.

The "Winter Term Program" offers subjects of value for boys planning to farm but there is no opportunity for selection by the students. The "Two-Year Certificate Program" has considerable range in selection of subjects but the limitations to acceptance by boys wanting less than four years of college are found in the courses which are required, especially chemistry and English. The small number of boys enrolled in these two programs, which appear to be designed for boys planning post high school training for farming, but less than four years of college, would indicate that (1) this group of boys do not have adequate knowledge about these courses, or (2) the

programs do not provide the kind of subjects wanted by them.

A need exists for further investigation into the subjects which are wanted by boys interested in limited post high school training for farming.

The education program at the high school level that is specifically designed for boys planning to farm is the vocational agriculture program. Thirty eight per cent of the boys in the state who plan to farm attend schools where they have an opportunity to take vocational agriculture.

Forty per cent of the boys planning to farm do not plan any post high school training. This suggests that an opportunity exists for the Extension Service and Vocational Agriculture Departments of the state to develop educational programs that will help prepare these boys for farming.

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Table 1. Career Plans, Educational Plans, and Years Vocational Agriculture Training of Senior Farm Boys in 23 South Dakota High Schools Sampled, 1963

School	Number of farm boys																							
	Plan farming career	Plan to attend college	Plan training less than four years college	Plan no training beyond high school	0 years Vo-Ag	1 year Vo-Ag	2 years Vo-Ag	3 years Vo-Ag	4 years Vo-Ag	Plan nonfarming career	Plan to attend college	Plan training less than four years college	Plan no training beyond high school	0 years Vo-Ag	1 year Vo-Ag	2 years Vo-Ag	3 years Vo-Ag	4 years Vo-Ag						
Bath	0	0	0	0						2	1	1	0						2	4	7	2	3	3
Buffalo	3	0	0	0					1	1	0	0	0					1	1	6	7	3	3	4
Canova	0	0	1	1				2		6	5	1	1				2		1	1	6	7	3	4
Custer	0	0	0	0						0	0	0	0						1	1	7	3	4	3
Dell Rapids	1	0	0	0				1		1	0	0	0				1		1	1	7	3	4	3
Freeman	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Fulton	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Hayti	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Henry	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Hudson	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Lyons	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Madison, General Beadle	0	0	0	0						1	0	0	0						1	1	7	3	4	3
McLaughlin	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Oelrichs	0	0	0	0						1	0	0	0						1	1	7	3	4	3
Pierre	0	0	0	0						1	0	0	0						1	1	7	3	4	3

Table 1. (continued)

School	Number of farm boys														
	Plan farming career	Plan to attend college	Plan training less than four years college	Plan no training beyond high school	0 years Vo-Ag	1 year Vo-Ag	2 years Vo-Ag	3 years Vo-Ag	4 years Vo-Ag	Plan nonfarming career	Plan to attend college	Plan training less than four years college	Plan no training beyond high school	0 years Vo-Ag	1 year Vo-Ag	2 years Vo-Ag	3 years Vo-Ag	4 years Vo-Ag
Pollock	2	0	0	2	2					6	1	5	0	6				
Ree Heights	0	0	0	0						1	0	1	0	1				
Salem	1	1	0	2				1		8	3	4	1		4	4		
South Shore	3	0	0	0				3		4	4	0	0		4			
Tulare	3	0	2	1					1	9	4	1	4		3	1	1	
Vermillion	4	1	0	3				2	1	8	3	2	3			2	1	
Wakonda	2	0	0	2					2	5	2	1	2				1	1
Webster	4	0	1	3					3	2	0	1	1					1

Table 2. Senior Boys and Senior Farm Boys in Schools Sampled, 1963

School	Senior farm boys	Senior boys
Bath	2	2
Buffalo	4	6
Canova	6	7
Custer	0	36
Dell Rapids	4	21
Freeman	12	16
Fulton	3	3
Hayti	4	4
Henry	4	8
Hudson	6	8
Lyons	9	17
Madison, General Beadle	12	27
McLaughlin	8	22
Oelrichs	3	3
Pierre	9	76
Pollock	8	12
Ree Heights	1	3
Salem	9	11
South Shore	7	10
Tulare	7	7
Vermillion	5	38
Wakonda	12	13
Webster	12	37

Table 3. Subjects Offered by One or More High Schools Sampled, and Per Cent of Boys Planning to Farm Who Find These Subjects Offered in the Schools They Attend

Course	Per Cent
English I	100
English II	100
English III	100
English IV	100
Algebra I	100
Typing I	100
Algebra II	100
Plane Geometry	98
Biology	94
General Science	100
American History	98
World History	96
Chemistry	96
Physics	92
Bookkeeping	81
American Government	81
Typing II	80
Shorthand I	77
Shop I	72
Home Economics I	
Home Economics II	
Economics	66
Trigonometry	53
Sociology	43
Home Economics III	
Psychology	30
Speech	53
German I	51
General Arithmetic I	15
Business Law	40
General Business	28
World or Economic Geography	26
German II	36
Latin I	34
Solid Geometry	40
Vocational Agriculture I	38
Vocational Agriculture II	38
Vocational Agriculture III	38
Vocational Agriculture IV	38

Table 3. (continued)

Course	Per Cent
Journalism	32
Business Arithmetic	15
Shorthand II	38
Spanish I	23
Latin II	28
Spanish II	13
General Arithmetic II	13
Civics or Citizenship	21
Social Studies	11
Home Economics IV	
Mechanical Drawing	11
Geology	6
Office Practice	17
International Relations	0
Vocational English	11
Drama	11
Creative Writing	11
German III	11
Spanish III	11
Advanced Biology	11
Advanced General Science	11
Problems of Democracy	11
Art	2
Welding	11
Power Mechanics	11
General Metals	11
Aeronautics	11

Table 4. Summary of Rating by Eight Panel Members of High School Subjects Considered Most Valuable to Boys Planning a Farming Career

Subjects	Rating value								Total
English	2	3	2	3	3	3	3	2	21
Algebra	1	3	1	2	2	1	2	2	14
General Science	2	3	2	2	2	3	3	3	20
Chemistry	2	3	1	2	3	2	3	2	18
Biology	3	3	3	2	3	3	3	3	23
Bookkeeping	2	3	2	3	2	2	3	3	20
American Government	2	2	1	2	3	2	3	1	16
Shop I (Ind. Arts)	1	2	2	2	1	1	3	3	15
Economics	3	3	3	2	3	3	3	3	23
Speech	2	3	1	3	3	2	2	2	18
Business Law	2	2	2	2	3	2	3	3	19
Vocational Agriculture	3	3	3	2	3	3	3	3	23
Shop II (Ind. Arts)	1	2	1	1	1	1	2	3	12
Civics or Citizenship	3	3	2	3	3	2	3	3	22
General Arithmetic I	3	2	2	1	2	2	3	3	18
Business Arithmetic	3	3	2	1	2	3	2	2	18
General Arithmetic II	2	2	2	1	1	2	1	2	13
Welding	3	3	3	3	1	3	3	2	21
Power Mechanics	3	3	3	3	1	3	3	3	22
General Metals	2	2	1	2	1	1	3	2	14
Mechanical Drawing	2	1	1	2	2	1	2	2	13
Advanced General Science	3	2	2	1	3	2	1	2	16
Advanced Biology	3	2	2	1	3	2	2	2	17

TO: High School Senior boys whose parents live on a farm or ranch.

There are three groups of statements listed below. In each group place a check in one square opposite the statement that most accurately describes your plan for the future, and your vocational agriculture enrollment.

GROUP I (Place a check in only one square)

Plan a career in farming ☐

Plan a nonfarming career ☐

GROUP II (Place a check in only one square)

Plan to attend college ☐

Plan advanced training beyond high school but less than four years of college. (Example - college short course, business school, mechanic course, etc.) ☐

Plan no formal training beyond high school. ☐

GROUP III (Place a check in only one square)

Number of years enrolled in vocational agriculture:

0 years ☐
1 year ☐
2 years ☐
3 years ☐
4 years ☐

Thank you.